WHAT IS CLAIMED IS:

A process for synthesizing a rubbery polymer that comprises copolymerizing at least one conjugated diolefin monomer and at least one functionalized monomer in an organic solvent at a temperature which is within the range of 20°C to about 100°C, wherein the polymerization is initiated with an anionic initiator, wherein the polymerization is conducted in the absence of conventional polar modifiers, and wherein the functionalized monomer has a structural formula selected from the group consisting of (a)

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$$CH = CH_2$$
 CH_2CH_2
 CH_2CH_2

wherein n represents an integer from 4 to about 10, (b)

wherein n represents an integer from 0 to about 10 and

wherein m represents an integer from 0 to about 10, with the proviso that the sum of n and m is at least 4;

5 CHCH₂

$$CH_2CH_2 \qquad (O - CH_2 - CH_2)_n - N$$

$$R'$$

wherein n represents an integer from 1 to about 10, and wherein R and R' can be the same or different and represent alkyl groups containing from 1 to about 10 carbon atoms; (d)

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$$CH_2 - CH_2$$
 $CH_2 - CH_2$ $CH_2 - CH_2$

wherein n represents an integer from 1 to about 10 and wherein m represents an integer from 4 to about 10;

25 (e)
$$CH = CH_2$$

$$CH_2CH_2 = (O - CH_2 - CH_2)_x - N - (CH_2)_n - O - (CH_2)_m$$

wherein x represents an integer from 1 to about 10, wherein n represents an integer from 0 to about 10 and wherein m

represents an integer from 0 to about 10, with the proviso that the sum of n and m is at least 4;

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wherein R represents a hydrogen atom or an alkyl group containing from 1 to about 10 carbon atoms, wherein n represents an integer from 0 to about 10, and wherein m represents an integer from 0 to about 10, with the proviso that the sum of n and m is at least 4; and

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$$CH = CH_2$$
 CH_2CH_2
 CH_2CH_2
 $CH_2(CH_2)_x$
 $CH_2(CH_2)_x$
 $CH_2(CH_2)_y$
 $CH_2(CH_2)_y$

wherein n represents an integer from 0 to about 10, wherein 30 m represents an integer from 0 to about 10, wherein x represents an integer from 1 to about 10, and wherein y represents an integer from 1 to about 10.

2. A process as specified in claim 1 wherein the functionalized monomer is of the structural formula

wherein n represents an integer from 4 to about 10.,

- 3. A process as specified in claim 2 wherein n represents 4.
 - 4. A process as specified in claim 2 wherein n represents 6.
- 5. A process as specified in claim 3 wherein the polymerization is initiated with an alkyl lithium compound.
- 6. A process as specified in claim 2 wherein the functionalized monomer and the conjugated diolefin monomer25 are terpolymerized with styrene.
 - 7. A process as specified in claim 2 wherein from 0.05 phm to about 20 phm of the functionalized monomer is polymerized.

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8. A process as specified in claim 2 wherein from 0.1 phm to about 10 phm of the functionalized monomer is polymerized.

9. A process as specified in claim 2 wherein from 0.1 phm to about 1 phm of the functionalized monomer is polymerized.

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- 10. A process as specified in claim 2 wherein from 0.3 phm to about 0.7 phm of the functionalized monomer is polymerized.
- 10 11. A process as specified in claim 5 wherein the polymerization is initiated with 0.01 phm to about 0.1 phm of the alkyl lithium compound.
- 12. A process as specified in claim 5 wherein the polymerization is initiated with 0.025 phm to about 0.07 phm of the alkyl lithium compound.
- 13. A process as specified in claim 2 wherein the polymerization temperature is within the range of about 45°C to about 100°C.
 - 14. A process as specified in claim 2 wherein the polymerization temperature is within the range of about 60°C to about 90°C.

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- 15. A process as specified in claim 6 wherein the conjugated diolefin monomer is 1,3-butadiene.
- 16. A process as specified in claim 6 wherein the 30 conjugated diolefin monomer is isoprene.
 - 17. A process as specified in claim 2 wherein the rubbery polymer is coupled with a tin halide.

- 18. A process as specified in claim 2 wherein the rubbery polymer is coupled with a silicon halide.
- 5 19. A process as specified in claim 5 wherein the alkyl lithium compound contains from 1 to about 8 carbon atoms.
- 20. A process as specified in claim 5 wherein the alkyl lithium compound is normal-butyl lithium.